



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/617,233

07/11/2003

Toshiaki Hirano

041514-5395

2330

55694 7590 12/21/2007
DRINKER BIDDLE & REATH (DC)
1500 K STREET, N.W.
SUITE 1100
WASHINGTON, DC 20005-1209

EXAMINER

LIN, JAMES

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

12/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/617,233

Applicant(s)

HIRANO ET AL.

Examiner

Jimmy Lin

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22, 24-27 and 29 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 22, 24-27 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: the phrase "(1,1,1) alignment" should be amended to "(111) alignment" to be consistent with the specification and the other claims and for better clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not provide support for forming a protection film "wherein the intensity of (111) diffraction of said protection film at said edge point is less than at most 15% of the maximum (111) diffraction of said protection film" using any possible method. For example, there is no support for a method of heating two evaporation sources that are spaced far apart enough from each other or that are spaced close enough to the substrate to achieve such characteristic. Rather, the specification only provides support for using a partition plate between two evaporation sources to achieve the claimed results. Because there is no support to achieve the claimed results using any possible method, the claim contains new matter.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21-22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 6,215,246) in view of Smith (WO 01/31081) and Ito et al. (U.S. Publication No. 2002/0008817).

Kim discloses a method of making a PDP (abstract), wherein a protection film 105 is formed on the PDP substrate. The protection film can be formed via an E-beam deposition in a vacuum (col. 2, lines 6-11; col. 4, lines 48-51; Figs. 2-3).

Kim does not explicitly teach (a) feeding the substrate along a passage and (b) heating and evaporating a plurality of evaporation sources to form the protection film such that at least one of the evaporation sources is located outside of the display area of the PDP. However, Smith teaches a method of forming a film via vacuum deposition (abstract). A plurality of point sources 46 can be arranged in a linear array (pg. 12, lines 23-29). At least one of the evaporation sources is located beyond the edge of the substrate 54 (Fig. 9). The substrate is moved at a constant velocity v in a first direction during deposition (pg. 15, lines 6-9). The linear design of the evaporation source helps to form a uniform film all the way to the very edges of the substrate (paragraph bridging pg. 16-17). Taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention to have fed the substrate along a passage such that at least one of the evaporation sources is positioned out of the display area of Kim with a reasonable expectation of success. One would have been motivated to do so in order to have formed the protection film with greater uniformity.

Smith does not explicitly teach a first line and a second line forming an angle equal to or smaller than 80 degrees, wherein the first line and the second line are respectively defined as a line connecting at least one of the evaporation sources located outside of the display area to a point on the display area closest to the evaporation source, and a line extending from the evaporation source in a direction parallel to a width of the substrate. However, Smith does teach that uniformity of the layer is best achieved when placing a deposition source beyond the deposition area (pg. 17, lines 1-5). One of ordinary skill in the art would have expected any angle formed by the first and second line to have achieved the advantage of forming a uniform layer, so long as a deposition source is placed beyond the deposition area. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to have placed a

deposition source beyond the deposition area such that the first and second line form any angle, including an angle of the claimed range, with a reasonable expectation of success and with the expectation of similar results.

Kim teaches that the protection film can be magnesium oxide (col. 4, lines 48-51), but does not explicitly teach that magnesium oxide has a (1,1,1) alignment. However, Ito teaches that it was well known in the art to have used (1,1,1) orientation of the MgO as the protective film for a PDP [0105]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used magnesium oxide of (1,1,1) alignment with a reasonable expectation of success because Ito teaches that it was operable in the art to use such a protection layer. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claim 22: Kim, Smith, and Ito do not explicitly teach that the intensity of (111) diffraction of the protection film at the edge point is less than at most 15% of the maximum (111) diffraction of the protection film. However, the present specification teaches that “in an area in which the angle α is equal to or smaller than 80 degrees, the intensity of (111) diffraction ray is 15% or smaller of the maximum intensity” (pg. 17, lines 15-19). Because one of ordinary skill would have formed any angle α smaller than 90 degrees, including the claimed range of less than 80 degrees, the combination of references would have suggested a similar method and a similar compound with respect to the claimed method. Unless the claims are omitting essential steps, the method as suggested by the references and the method as claimed would necessarily yield similar results. Thus, the magnesium oxide protection film of Kim, Smith, and Ito would necessarily have an intensity of (111) diffraction of the protection film at the edge point less than 15% of the maximum (111) diffraction of the protection film.

Claim 29: The references as a whole suggest that a line extending from at least one of the evaporation sources in a direction toward the substrate and perpendicular to the first direction intersects a portion of the substrate outside of the display area (Fig. 9 of Smith).

6. Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim '246 in view of Smith '081 and Ito '817 as applied to claim 21 above, and further in view of the Applicant's admitted prior art (hereinafter "AAPA").

Claim 24: Kim, Smith, and Ito are discussed above, but do not explicitly teach that the substrate has at least two display areas each having a size of 50-size or greater. However, AAPA teaches that it is known in the art to deposit onto such a substrate (pg. 4, line 28 – pg. 5, line 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have deposited onto a substrate having two display areas each having a size of 50-size or greater in the method of Kim. One would have been motivated to do so in order to increase the production and efficiency of the process.

Claim 25-26: Kim, Smith, and Ito do not explicitly teach that the substrate has at least three display areas or that the display area can be a size of 55-size or greater. However, AAPA teaches that it is known in the art to deposit onto such a substrate, wherein the substrate has a display area having such a size (pg. 4, line 26 – pg. 5, line 4). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used substrates having three display areas and display areas of 55-size because AAPA teaches that such substrates and display areas are suitable in the method of making a PDP.

7. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim '246 in view of Smith '081 and Ito '817 as applied to claim 21 above, and further in view of Konishi (U.S. Patent No. 5,957,743).

Kim, Smith, and Ito are discussed above, but do not explicitly teach that the display area can be a size of 60-size or greater. However, Konishi teaches that plasma displays can have up to a size of 60 inches (col. 1, lines 57-62). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have made a display area of 60 inches with a reasonable expectation of success because Konishi teaches that

Art Unit: 1792

such plasma display sizes are capable of being produced and that such sizes are suitable for plasma displays.

Response to Arguments

8. Applicant's arguments filed 10/16/2007 have been fully considered but they are not persuasive.

Applicant argues on pg. 15 that Kim and Smith do not teach or suggest magnesium oxide having (1,1,1) alignment. However, Ito teaches that the use of such alignment of magnesium oxide was well known in the art of forming a protection film on a plasma display panel. Due to amendments to the claims, the grounds of rejection have been modified to incorporate the teachings of Ito.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aoki et al. (U.S. Patent No. 5,770,921) teaches the vapor deposition of MgO and Miyashita et al. (U.S. Patent No. 2004/0075388) teaches that the deposition of MgO can include the formation of (111) plane orientation and (100) plane orientation [0143]-[0159].

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Art Unit: 1792

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JL
JL



TIMOTHY MEESKS
SUPERVISORY PATENT EXAMINER